What is the evidence for the use of probiotics in the treatment of inflammatory bowel disease?

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CRD summary
The review appeared to conclude that most of the probiotics studied had beneficial effects in the treatment of inflammatory bowel disease, especially when taken as a dietary supplement with standard treatment, but that further research is needed. The review had several limitations which reduces the reliability of the conclusions, but the authors’ call for further research appears appropriate.

Authors' objectives
To explore prospectively randomised trials that study the use of probiotics for the treatment of inflammatory bowel disease.

Searching
MEDLINE, EMBASE, CINAHL and the Cochrane Library were searched from 1997 for articles published in English. Search terms were reported. Reference lists of retrieved articles were also searched.

Study selection
Studies of probiotic treatment (any type or form) in children or adults patients with inflammatory bowel disease were eligible for inclusion. Patients could have Crohn's disease or ulcerative colitis; the disease could be active or in remission. Probiotics were defined as nutritional supplements that were made up of live microorganisms that were expected to have a positive benefit on the patient's health. Studies of prebiotics or synbiotics were excluded.

The included studies evaluated adults or children with ulcerative colitis, indeterminate colitis or Crohn's disease. The probiotic treatments included Escherichia coli (E. coli), Lactobacillus, Saccharomyces boulardii, bifidobacteria-fermented milk, and VSL #3 supplement. Patients with both active disease and remissive disease were included. The comparators included mesalazine or placebo (where applicable). Outcomes reported included remission rates, response rates, time to relapse, and exacerbation of symptoms.

The authors did not state how many reviewers were involved in study selection.

Assessment of study quality
The authors did not state how the validity assessment was undertaken or how many reviewers were involved.

Data extraction
Data were extracted on clinical outcomes, including remission rates, response rates and time to relapse.

The authors indicated that only one reviewer was involved in data extraction.

Methods of synthesis
A narrative synthesis was presented grouping studies according to probiotic type.

Results of the review
Fifteen studies (n=1,374 patients) were included in the review. The study sample size ranged from 4 to 413 patients.

Two trials of Bifidobacteria-fermented milk in patients with ulcerative colitis demonstrated positive effects. Three trials of E. coli in patients with ulcerative colitis found that E. coli might have equivalent effects to mesalazine. Of the six trials of Lactobacillus in patients with primarily Crohn's disease, only two found positive benefits. One trial of Saccharomyces boulardii in patients with Crohn's disease found positive benefits. One trial of VSL #3 supplement in
patients with ulcerative colitis also found positive benefits.

Authors’ conclusions
The authors appeared to conclude that most of the probiotics studied have beneficial effects in the treatment of inflammatory bowel disease, especially when taken as a dietary supplement adjunctive to standard treatment. Further research is needed.

CRD commentary
The inclusion criteria for the review were broadly defined. Several relevant databases were searched. Only English language articles were included in the review, so there was the potential for language bias. Publication bias was not assessed and could not be ruled out. The authors did not state how many reviewers were involved in the selection of studies or quality assessment, and indicated that only one author was involved in data extraction, which may have increased the potential for bias and error in the review.

Quality assessment was not formally undertaken, which made it difficult to determine the quality of the included studies. Trials were narratively synthesised, although the potential for meta-analysis was not explored.

The review had several limitations which reduce the reliability of the conclusions, but the authors’ call for further research appears appropriate.

Implications of the review for practice and research
Practice: The authors stated that it is important for healthcare providers to incorporate probiotics into the treatment of patients with inflammatory bowel disease. Healthcare providers, particularly nurses, need to become knowledgeable regarding the use and effects of probiotics for inflammatory bowel disease, and educate patients. The authors suggested that seminars or classes on the uses of probiotics in inflammatory bowel disease for both healthcare providers and patients could possibly be implemented.

Research: The authors stated that large multi-level, multicentre randomised controlled trials are needed to better understand the specific measures and effectiveness of probiotics in treating inflammatory bowel disease. There is also a need to test all probiotics and ascertain the safety of their use.

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